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BOOK REVIEWS

The Dynamic Foundation of Knowledge. ALEXANDER PHILIP.
London, Kegan Paul, French, Trübner & Co.; New York, E. P.
Dutton & Co., 1913. pp. 318.

The thesis which the author of this volume endeavors to maintain and to elaborate is that the world of sensible experience is to be interpreted in terms of a potency or potencies of which sensible objects are the transmutations. The key to our philosophical problems is to be sought neither in sense nor in thought, but in our own individual activity. Taking this activity as our starting point, we are enabled to get beyond our conscious selves, and yet we do not transcend experience. The Real can be found only in "the exertional element of our life, and that element being also that which interacts with and which participates in our environment, seems obviously the element for or by which we derive the knowledge of the independently real. In our exertional activity we are linked and intermingled with the dynamic system which constitutes our environment. Community of knowledge is rendered possible by and only by this participation. When the phenomena of sense can be accounted for as transmutations of a real energy or potency, then and only then can their appearance be explained by a theory consonant with the requirements of an intellectual metaphysic" (p. 64).

On this basis the proper procedure is a preliminary study of the body. The dynamic activities pertaining to the body are discovered by us through the stresses resulting from the limitations and opposition of the environment. These stresses are reported by the nerves to the sensorium, which is the common point of origin of the nerves of the special senses as well as the ultimate terminus of the afferent and excitant nerves of touch and motion. If the sensible impression is not transmitted beyond the sensorium, it is represented merely by a sensation. But the cerebrum may be stimulated, with the result that ideative cognition of the external is induced, the sensation being the material upon which it operates. On the basis of this distinction the author recognizes two kinds of activity, motor activity and the activity of thought. The former is conditioned by space, and hence the axioms of geometry have an *a priori* warrant. The activity of thought is not thus conditioned and hence it is bound by no *a priori* law save that of contradiction.

These axioms or *a priori* conditions, however, are not to be conceived in the manner of Kant, but are conditions laid down by the nature of power, potency or energy, which is the true and fundamental postulate of philosophy. This power, when it takes the form of movement, operates under the appearance of tridimensional space; when it takes the form of thought it operates in accordance with the law of contradiction. The rather obvious inference that if space is merely an appearance, contradiction must likewise be merely appearance seems to be left unnoticed by the author. Nor is he willing to concede that the limitation of thought to the material of sense rules

out the concept of power or potency. "Cerebral activity is adapted to represent, though it is not confined to representing, the dynamic process; and in such representative activity the object is not sensation but motor activity. Thoughts, or ideas, as Plato called them, when they represent the process of reality, do not do so by reproducing in fainter form the fleeting sensations which are the mere accompaniments of the obstruction of motor activity. What cerebral activity does is to reproduce or rather represent the dynamic activity in which sensation arises" (p. 187).

The merit of the volume, as it seems to the reviewer, lies in its recognition that the traditional apparatus of sensation and thought is inadequate. Hence the attempt is made to find in power or potency a category that will remove the difficulties. But the author's account of the individual experience which arises in response to the obstruction of motor activity lands us once more in the time-worn categories of sensation and thought, and confronts us anew with the familiar puzzle of representationism. The things of sensible experience *represent* "the result or supposed result of action;" and similarly the activity of thought represents the dynamic activity in which sensation arises. "The mariner observes his position at noon. It is a static fact, but it is determined by dynamic changes; and is not its object to determine the course of his vessel? What is true of the visible is equally true of the tangible, of the audible, and of the whole sensible world. All tactile resistances in some way represent dynamic action" (p. 67). This *might*, of course, be interpreted in the pragmatic sense that objects of sense embody or reflect an adjustment that is completed and that their *meaning* is exhausted in adjustments which are to be made at a future time. But the author does not follow this road. The potency with which he deals is a reality or entity in an absolutistic sense, and like every other ultimate it is under no particular obligation to make itself intelligible.

How the fact of activity becomes a matter of knowledge is not made very clear, even though a considerable portion of the chapter on *activity* is devoted to this question. It is obviously not a fact of sense-perception, for if it were, there would be no justification for the condemnation of sense-experience as purely phenomenal. But neither is it an intuition. The question is left unanswered, unless we regard as answers certain *nichts sagende* statements such as the following: "It is by and in the obstructions of my exertional activity that its forms are defined. Sensation seems to be the medium by which both Discourse and Exertion are rendered knowable" (p. 25).

Waiving this point, however, we find further perplexities in store for us when we attempt to consider the nature of this potency. It is not merely the absence of description but the absence of coherence that is likely to trouble the reader. The author at the start makes appeal to the prevalence of universal change, apparently on the basis of observed fact, and concludes from this that we do not observe the real but only the transmutations of the real. Where observation fails to establish this change, physics and chemistry help out with their description of the processes involved in perception and in the fact perceived. Having thus compelled observation to commit suicide by means of its own category of change, the author proceeds to include space and time among the changes which the real undergoes. We are thus—to paraphrase a recent writer—treated to the spectacle of seeing a man carry a variety of things into a house and finally carry the house itself in. "The ascertained laws of energetic

transmutation involve the dynamical relativity of Space and Time, which are quantifying ratios, but not at all the categorical continent of Experience. The antinomies of temporal succession, the dilemmas of Zeno, disappear when we envisage the fact that the energetic transmutation is in essence timeless and inextensive" (p. 196).

It does not seem worth while to follow out in further detail the windings of the argument. The absence of any serious attempt to define the fundamental concepts of the book—sensation, representation, knowledge, independence, and change or transmutation—gives little promise that any genuine contribution is to be expected. And it may be added that a better understanding of the present-day discussions which the author dismisses so complacently with a flourish of rhetorical phrases is more to be desired than additions to the long list of sins that are committed in the name of philosophy.

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The Learning Process. By S. S. COLVIN, Ph.D. New York, the Macmillan Co., 1911. pp. xxv, 336. Price, \$1.25, net.

In order to be of value from the point of view of the teacher, educational psychology must be neither so speculative and general that it offers no better aid in the solution of practical problems than does common sense, nor so abstract and technical that its facts have no relation to the everyday work of teaching.

Unlike many books on the subject, the *Learning Process* can escape both of these criticisms. "The point of view," says the author, "is a thoroughgoing functionalism and pragmatism." There are no long discussions of the relation of body to mind, the structure of the nervous system, the nature of mind, and so on. After a general consideration of the fundamental elements of the learning process, the author goes directly to the concrete facts. The chapters on habit, sensation and perception, imagination, memory, association, and the transfer of training are clear, condensed accounts, drawn chiefly from experimental works, with frequent summaries and constant interpretation to hold the facts together. Each chapter has a direct and evident bearing on the chapter on application which follows it. These latter chapters are perhaps the distinguishing feature of the book. The recommendations and rules contained in them are many, and they are definite, concrete, and detailed. The chapters on transfer of training, for example, are followed by the application of the given principles to such questions as the disciplinary value of the various studies, the elective system, pure *versus* applied science, the importance of ideas and attitudes in the formation of habits; the chapter on memory, by application to questions of learning by wholes or by parts, distributed learning, 'bunching' the school program, short and unrelated courses, the value of the recitation and of examinations, modes of presentation, aids in learning, etc.

The chapters on attention and interest and on the higher thought processes, and a part of the discussion of reflex action and instinct, are rather more classificatory, theoretical, or formal than the rest, and the generalizations in them find less evident and less extended application. It seems probable that some of these generalizations cannot be specifically applied; if so, a portion of the material might have been omitted (for example, the discussion of attributive clearness, and the structural and logical account of concept and judgment). The statement (p. 140) that "Ebbinghaus attempted to exclude all associative factors in his learning," and that "he really